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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,081	02/26/2002	Chulhee Lee		2662

7590 06/28/2005

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EXAMINER

CZEKAJ, DAVID J

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/082,081

Applicant(s)

LEE, CHULHEE

Examiner

Dave Czekaj

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) 3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: In the brief description of the drawings, the examiner understood "Fig. 3b" to be "Fig. 1b"

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gharavi (5235420) in view of Fukuhara et al. (2001/0024530), (hereinafter referred to as "Fukuhara").

Regarding claim 1, Gharavi discloses an apparatus that relates to the coding of video signals (Gharavi: column 1, lines 5-7). This apparatus comprises "a two-dimensional wavelet transform that is applied to each frame of a source and processed video, producing wavelet coefficients" (Gharavi: figure 1, column 4, lines 12-17, wherein the coefficients are the bands), "a difference computing means that computes a subband difference in each subband block" (Gharavi: figure 1, items 108-111, wherein the interframe coder or difference coder computes the subband difference), and "a combining means that combines the sequence of difference vectors" (Gharavi: figure 1, wherein the combining

means is the multiplexer). However, this apparatus lacks the weighting means as claimed. Fukuhara teaches that it is impossible to perform fine control for a specified area in a picture (Fukuhara: paragraphs 0008-0009). To help alleviate this problem, Fukuhara discloses "a weighting means that produces a number which is used as an objective score for measurement of video quality" (Fukuhara: paragraph 0013). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Gharavi and add the weighting means taught by Fukuhara in order to obtain an apparatus that achieves the highest video quality possible.

Regarding claim 4, note the examiners rejection for claim 1 and in addition Fukuhara discloses "a frequency computing means that computes spatial and temporal frequency differences" (Fukuhara: figure 11, paragraphs 0123-0125).

Regarding claim 5, Fukuhara discloses "applying a transform to the video and computing coefficient differences" ((Fukuhara: figure 1, wherein the transform is the wavelet transform).

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gharavi (5235420) in view of Fukuhara et al. (2001/0024530), (hereinafter referred to as "Fukuhara") in further view of Acharya et al. (6154493), (hereinafter referred to as "Acharya").

Regarding claim 2, note the examiners rejection for claim 1, and in addition, claim 2 differs from claim 1 in that claim 2 further requires applying a one-dimensional wavelet transform after the two-dimensional wavelet transform.

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Acharya teaches that prior art image processing techniques are unable to be effectively implemented in small cost-conscious devices (Acharya: column 2, lines 60-62). To help alleviate this problem, Acharya discloses "applying a one-dimensional wavelet transform to a sequence of difference vectors" (Acharya: figures 4 and 6). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Gharavi, add the weighting means taught by Fukuhara, and add the wavelet transform means taught by Acharya in order to obtain an apparatus that can cost-effectively achieve the highest video quality possible.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US-5777678	07-1998	Ogata et al.
US-5883978	03-1999	Ono, Natsushi
US-6021224	02-2000	Castelli et al.
US-6075878	06-2000	Yoshida et al.
US-6144769	11-2000	Sato et al.
US-6154493	11-2000	Acharya et al.
US-6801573	10-2004	Zheng, Yuan F.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dave Czekaj whose telephone number is (571) 272-7327. The examiner can normally be reached on Monday - Friday 9 hours.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DJC


VU LE
PRIMARY EXAMINER